Support Cells Prevent Mature Heart from Repairing Damage

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Researchers at the Gladstone Institute of Cardiovascular Disease may have discovered why developing heart muscles cells multiply in numbers while the adult counterparts do not. This finding could lead to therapies that roll back the clocks on heart muscle cells after injury such as a heart attack, allowing those cells to multiply and repair the damage. The researchers specifically looked at the role of cells called fibroblasts, which are packed in the heart amidst the muscle cells. They found that fibroblasts in embryonic mouse hearts release proteins that encourage the muscle cells to divide. In contrast, fibroblasts in adult hearts release proteins that encourage muscle cells to expand in size but actively inhibit the cells from multiplying. That role makes sense in healthy hearts, where new cells aren't needed, but after injury those fibroblasts prevent the heart from being able to repair itself. The researchers hope this finding could lead to new ways of repairing heart tissue after injury.

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